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The Application of Sulphanilamide Therapy for the Control of Str. agalactiae Infection in one Herd

By

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In a previous paper by Edwards & Brownlee (1946), it was shown that in quarters clinically affected with mastitis due to *Str. agalactiae* 74 per cent. were cured by a course of four injections of a 30 per cent. sulphanilamide emulsion and that further treatment resulted in an even higher percentage of cures. This paper describes an attempt to control *Str. agalactiae* infection in a herd by means of frequent bacteriological tests and treatment of all infected cows.

HERD HISTORY

This herd of 55 cows, mainly Ayrshires, had been tested bacteriologically since 1939. From 1941 onwards, an intensive study was also made of the infection rate both in the milk of lactating cows and on the surface of the teats, and these results, described under the title of herd C2, have, in part, been published (1944, *Bull. imp. Bur. Anim. Hlth*, No. 2). It may be said that clinical mastitis had not been serious since in not more than seven to ten animals could abnormalities in the milk be detected at a single test. A high proportion of the milking cows, however, had shown lesions of the teats consisting mainly of fissures and granulating sores which, at times, were located at the teat orifice. This condition was especially prevalent following the experimental application of an antiseptic ointment containing CTAB in August, 1943. In a publication on the results of this treatment (Hughes & Edwards, 1946), the increased prevalence of such teat lesions was commented upon, and it was stated that they were responsible for a rapid increase in the infection due to *Str. agalactiae* of teat surfaces and the milk. Although 15 months had elapsed since the application of the teat dressing, the incidence of teat lesions continued to be high, especially during the winter months preceding the application of therapy in March, 1945.

METHODS

1. *At milking.*—The herd was machine milked and hand-stripped. A separate sterile cloth was used for washing the udder of each cow, the cloths being wetted thoroughly with water containing no disinfectant run from a churn. The milking machine clusters were immersed momentarily in water containing a sodium hypochlorite solution (4 oz. to the gallon of water), and milkers washed their hands in this solution between the stripping of cows. On the day of sampling the persons engaged in washing the cows' udders wore rubber gloves and disinfected their hands between cows in order to avoid the more immediate contamination of the skin at this time.

2. *Collection of milk samples and teat swabs.*—The technique applied here was in all respects the same as that described in the Bulletin to which reference has been made.

3. *Examination of milk samples and teat swabs.*—In addition to the method of enrichment described, milk samples were examined by the direct method of cultivation in which 0·5 ml. of the shaken milk was plated in Edwards' agar. Plates were incubated at 37° C. over-night when they received a preliminary examination, and again for a further 24 hours when they were finally read. In the week before treatment, four daily cultural tests by the direct method were made on the milk samples of each cow in order to determine the infected cows; samples were also cultured by the enriched method on one of those days. Thereafter, samples were examined daily for the first week and then at weekly intervals by the direct method, and every two weeks by the enriched method.

4. *Sensitivity of strains to sulphanilamide.*—Colonies of *Str. agalactiae* recovered from the direct plating method were examined for their sensitivity to sulphanilamide in a concentration of 1/2,000 *in vitro* using the method described by Edwards & Brownlee (1946).

5. *Therapeutic treatment.*—Before applying treatment, the teat orifices were cleaned with a pledget of cotton wool soaked in 50 per cent. alcohol. Injections of sulphanilamide emulsion were made with a 50 ml. syringe to which a teat syphon was attached; a separate sterile syringe was used for each cow and sterile syphons for each teat. Milking cows, which were injected each day after afternoon milking, received a minimum of two daily injections and a third injection was only administered if the cultural test on the milk taken after the first injection showed that infection was still present. Further injections were continued in those cows which had not responded to this treatment. Dry cows received four injections into each quarter on consecutive days and their milk was examined bacteriologically at the beginning of the subsequent lactation.

Results

These are represented in Fig. 1, (overleaf) which shows the course of infection found by the direct method of cultivation. At the four daily tests preceding treatment, 24 milking cows were infected on the first two daily tests and 22 on the second two daily tests; 13 dry cows were infected and four free. Thus, the total infection in the herd, as shown by the direct method, was 37 cows out of 55 (67·5 per cent.) while by the enriched method it was 71 per cent.

Fig. 1 shows that the infection present in 24 milking cows was reduced in one week to two cows. After seven daily injections, infection was still detected in the milk of two cows (C. Bounty and C. Goodgift); in the former it was not eliminated until 12 injections had been administered, while in the latter it persisted even after 14 continuous daily injections.

It will be seen also that although infection was reduced by daily treatment in the first week, it continued to appear in a small number of cows at the weekly tests conducted subsequently. From 8.4.45 to 7.8.45, the milking cows were not completely freed from infection except at two tests but after this date no infection could be detected by the direct method for six tests.

The decrease in infection was also confirmed by the enriched method of cultivation (Fig. 2, p. 47) but at no test was the herd entirely free. Infection on the surface of the teats also showed a similar fall. After an interval of six weeks infection again was found in one cow (Celanese), and at subsequent tests one or two fresh cases appeared. At the conclusion of the experimental period, 24.1.46, there were still six (18 per cent.) infected milking cows by the direct test. The results of initial treatment and the number of injections required to clear infection are shown in the following table.

RESPONSE TO PRIMARY TREATMENT

Number of cows infected	Number of cows freed from infection			
24	Number of injections required	1 2 3 4	5 6 7 8	>8
	Number of cows responding	6 4 7 0	2 1 0 0	4

The criterion of bacteriological cure in the above table was that infection should be absent on at least six consecutive tests following the last injection, although in fact the majority of cows were free for many more tests. Thus, response with four injections was obtained in 70 per cent. of the cows, while eight injections cured 20 out of 24 infected cows (84 per cent.), a figure which agrees closely with that obtained in earlier work.

Regarding the four cows which required more than eight injections, the following observations were made:—

Aconite showed slight induration of one quarter and persistent sores on all teats. She received seven injections of sulphanilamide, but not on consecutive days. After two injections the milk was free from *Str. agalactiae* on three successive days but appeared in small numbers (eight per 0·5 ml. of milk) on the fourth day. Accordingly, two further injections were given and again no infection was found at three tests during one week. At the following weekly test infection was still present and three further injections were given to be followed by three successive negative daily tests. After

this, seven injections of penicillin were given using a daily dosage of 20,000 units without success. The cow was then removed from the herd into isolation and treated again with two injections of penicillin. At the same time, treatment was applied to the sores which had been persisting on the teat surface, using sulphanilamide ointment. By the combined treatments infection was eliminated.

Goodgift.—This cow, which showed distinct fibrosis and atrophy of the left hindquarter, was given 14 successive sulphanilamide injections and 14 penicillin injections without success. She was removed to isolation and, following two further injections of penicillin, no infection was found for six daily tests. Subsequently, one quarter developed infection again and 16 further injections of sulphanilamide were required to free the quarter. All quarters of this cow showed the presence of granulating lesions at the teat orifice which persisted throughout treatment.

Ladybird was clinically normal and was treated with eight injections and gave three negative tests, but showed infection again; six further injections were also unsuccessful. Six injections of penicillin were required to eliminate infection. This cow again was affected with lesions of the teat.

C. Bounty showed evidence of chronic mastitis, with fibrosis of two quarters and atrophy of the lett hindquarter with clots in the miik. Twelve daily injections of sulphanilamide were required to effect a permanent cure. Abrasions of the teat were also noted in this cow.

A further cow, Celanese, which proved difficult to free from infection, was dry at the beginning of the experiment. She calved, after receiving four injections when dry, and gave seven negative tests, but at the eighth test, one colony of *Str. agalactiae* was present. After two injections she gave three negative tests within ten days, followed by definite infection. Thereafter, she was treated twice and gave four negative tests, followed later by the appearance of four colonies in the mixed sample. Further courses administered to this cow were followed by a period of freedom from infection, and then the appearance of a few organisms. After 24 injections she showed 12 negative tests, but again became infected.

The detailed treatment of these cows has been given as evidence of the difficulty of freeing certain cows from infection. Attention should be drawn to frequency of teat lesions in these cases as a factor probably contributing to the failure in treatment.

The predisposing influence which teat lesions play in causing re-infection in treated cows was further observed in the 20 cows which were successfully treated at the beginning of the experiment. Ten of these became re-infected during the experiment but, of these, nine were recorded as having lesions of the teats. Again, of the 18 cows free from infection (14 milking and four dry) at the pre-treatment tests, only three showed infection during the experiment and all these showed abrasions of the teats previous to infection.

Of the 13 infected cows which were dry at the beginning and which received four daily injections of sulphanilamide, only one calved with *Str. agalactiae* infection in her milk. This cow was recorded as having sores of the teats continuously.

On the other hand, the difficulty in sterilising infection in certain cases may be due to the resistance of the infecting organism to sulphanilamide. At the beginning of the experiment, *Str. agalactiae* strains recovered from 17 of the 24 infected cows were examined with regard to sulphanilamide resistance *in vitro* using blood agar, including a concentration of 1 : 2,000 of the drug. Of these 17 strains, eleven proved resistant and six sensitive to this concentration; but there was no evidence that cows infected with resistant strains were more refractory to treatment than those infected with sensitive strains.

Discussion

Recently, considerable success has been achieved by the use of sulphanilamide and penicillin therapy in streptococcus mastitis and the literature includes several reports showing the favourable response obtained in the treatment of individual cases. The application of therapy in combating herd infection has not, however, been recorded. It is known that considerable difficulty has been experienced in controlling the spread of infection by hygienic methods alone—recent investigations have attempted to explain this failure by the rapidity with which infection is disseminated—and that there are reservoirs of infection in sites apart from the udder of infected cows such as the exterior of the teat, milker's hands and dairy utensils (Harrison, 1941; I.B.A.H., 1944; Spencer, McCarter & Beach, 1946).

The results of the present experiment further amplify the view that the eradication of the organism from the latter sites must be a complementary measure to its destruction within the gland. There appears to be evidence in this investigation that failure in

FIG. I

Successive tests showing effect of sulphanilamide therapy in reducing incidence of Str.agalactiae infection in one herd.

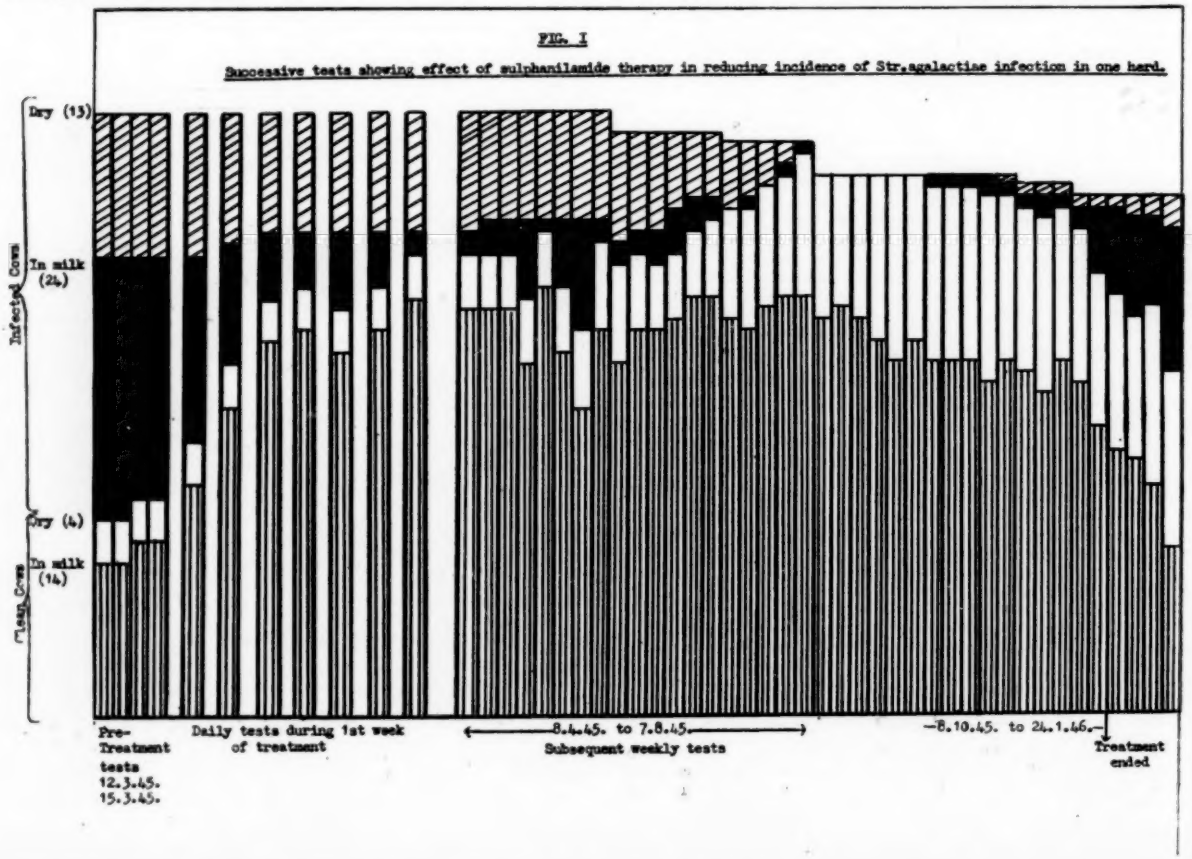
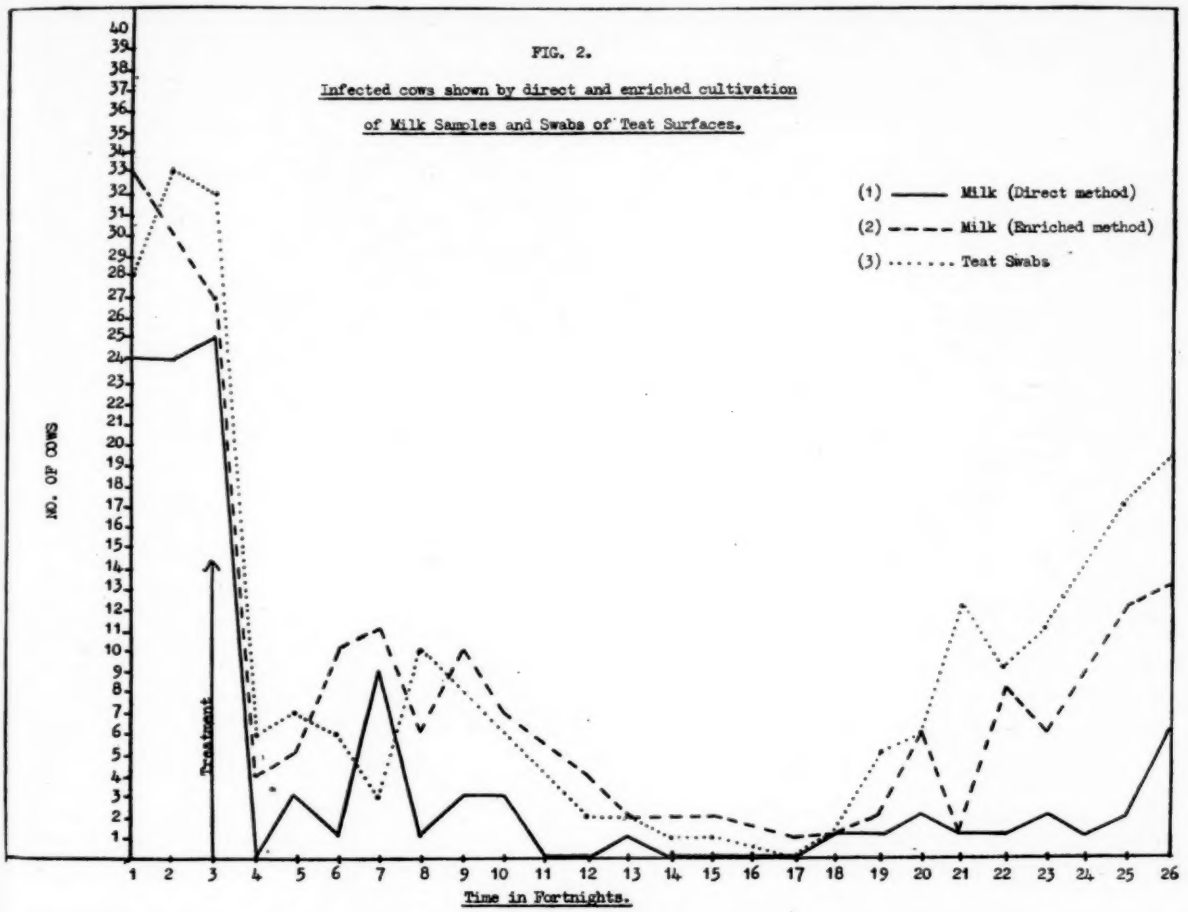


FIG. 2.

Infected cows shown by direct and enriched cultivation of Milk Samples and Swabs of Teat Surfaces.



therapeutic treatment is attributable to a co-existing lesion of the teat surface and that organisms located in these lesions provide a source for rapid re-infection of the udder. Such refractory cases do not respond to treatment either with sulphanilamide or penicillin until the teat lesions are subjected to simultaneous treatment. Furthermore, their retention in the herd is a risk to the spread of infection to non-infected animals.

In herds where teat lesions are relatively frequent such as the herd now under discussion, it might be anticipated that the initial success of therapy in reducing infection would only be of a temporary nature. On the other hand, in herds where there is no widespread distribution of teat lesions, therapy may be more successful since it has been shown in this experiment that infection on the teat surface is rapidly reduced. The other situation in which *Str. agalactiae* is located is on the hands of milkers and it is accepted to be a difficult measure to sterilise such infection completely. In herds where hand milking or stripping is practised, therefore, particular attention should be paid to adequate disinfection of hands at the commencement of treatment or more profitably the practice of hand stripping should be dispensed with.

While this experiment, therefore, showed that considerable initial success was attained in reducing infection by sulphanilamide therapy, it failed to achieve complete eradication except for a short interval. It would appear that the resistance of the organism in extraneous sites, together with the retention of refractory cases, are important factors in determining the progress made in eradicating *Str. agalactiae*.

Summary

1. An account is given of the treatment of a herd of 55 cows by intramammary injection of a 30 per cent. sulphanilamide emulsion with a view to studying its effect on the incidence of *Str. agalactiae* infection.

2. The experiment showed that the infection rate was reduced in the milking cows from 63 per cent. to 5 per cent.

3. The experiment was continued for ten months, during which time the herd was examined by weekly tests. For the first four months a small number of infected cows was found at every test, but this was followed by a period of six weeks during which no established case of infection was found, although by the enriched method of cultivation *Str. agalactiae* was still present in the herd. For the remainder of the experiment the herd was not clear of infection in spite of continuous therapy of all newly infected cows.

4. The persistence of infection is discussed with regard to the high incidence of lesions on the teat surface and the retention of cows resisting treatment in the herd.

Acknowledgment.—We wish to express our thanks to Dr. W. S. Gordon for his interest and helpful advice in this work.

References

—— *Bull. imp. Bur. Anim. Hlth.* (1944.) No. 2.
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A planned reduction of animals in Western Europe to ensure he best use of reduced supplies of animal feeding-stuffs has been recommended to the World Food Council by its committee on animal feeds. The committee declared this was inevitable because of the impossibility of doing anything to alleviate the feeding-stuff shortages during the winter and spring.

Ley Farming

By

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Although a great deal more is heard of ley farming to-day, it is, of course, an old-established practice, the only new feature being the improved grasses and clovers which are now available in quantity.

In normal times, many tenant-farmers were liable to a penalty if they broke up a permanent pasture, whereas in other areas of the British Isles, a penalty could be imposed on the farmer who left his land down to grass for more than three or four years.

I have before me an old lease dated 1859, which sets out the actual three-year ley system to be followed. The greater advantages of three-year ley farming were not, however, apparent until the possibilities of genuine wild white clover (latterly improved strains) were fully realised just after the 1914-18 war. Prior to this, those farmers who were following a three-year ley system of farming found that in two or three years the ley deteriorated so much that to keep the land "in heart" it was necessary in many cases to plough up and put through a rotation with the addition of organic manure if the first straw crop was to be a heavy one.

Wild white clover and good management altered all this, and nowadays on the well-managed three-year ley, when ploughed up, the difficulty is to find a cereal with sufficient standing power to absorb the high fertility.

A good example of this increase in fertility *and* stock-carrying capacity is shown on a farm in Somerset.

For many years an improved seeds mixture has been used on the 94 acre holding which is 900 to 1,200 feet above sea level. The increase in stock carrying capacity and higher yields in crop yield is phenomenal, as the following figures show :

	Past	*Present*
Ewes	100	154
Wool	900 lb.	2,000 lb.
Cattle	15-20	30

There are similar increases in the oats and root yields and, in general, production has increased during the last 20 years by 50 per cent. This has been attained by the liberal use of phosphates and lime and improved seeds mixtures.

Fortunately, this is not an isolated example ; it would be the exception to find a farmer in West Somerset who does not follow these principles.

Under such a system the ley is part and parcel of the arable rotation. Grass is just as much a crop as the root break and is treated as such.

These leys give higher production than a permanent pasture. Not only is the grass better, but the resultant *arable* crops are greatly increased, with less likelihood of disease to livestock where the plough is kept moving round the farm. It does not follow from this that a system of ley farming is suitable for the whole country. Some of the reasons are :—

1. Lack of fencing, water, etc.
2. Floodable, heavy land.
3. Inaccessibility of fields.
4. The land may be more suitable for other crops (*i.e.*, root crops such as sugar beet where a one-year ley system may be followed), etc.

It is evident that such a system is "catching on" in many areas and although three-year leys may not be advisable to replace some of our best grazing, there is little doubt that what is left of our second- and third-rate permanent pastures could very well be replaced by a "three-year ley system" of one type or another. On some of our heavier soils, especially in dairying districts, a system where the ley is left down longer than three or four years may be the best practice.

Once a farmer has followed a three-year ley system of farming, he is not likely to go back to permanent pasture—although he may be kept awake at night thinking about the danger of this quick-growing grass to his livestock. It is common experience that high protein quick-growing grass and clover will, in certain cases, cause blowing, especially where hungry cattle are turned on to a succulent rapidly-growing ley. Consequently, great care is necessary when turning out for the first time. Although very little is known about blowing, some of our best stockmen believe that some roughage should always be available if danger threatens. Cattle that have been well wintered seem to be less subject to blowing than others. Frosty, wet or dewy grass also appears to be dangerous, although I have known cases during the summer where the animals have started blowing for no apparent reason. No doubt more care is necessary when dealing with a vigorous young pasture giving a very high yield. In some instances, mineral deficiencies are blamed for troubles in stock grazing young leys. This aspect presents a new field for investigation and an important one from the veterinary angle.

This brings me to a further point, control of grazing. The ideal pasture would seem to be a mixture of approximately 50 per cent. grass and 50 per cent. clover, but it is not easy to attain this in a quick, active mixture—too heavy prolonged grazing in the spring will have a depressing effect on the grasses, and it is possible, by continuous heavy stocking, to eliminate the grasses almost entirely. The best farmers watch this carefully and do not stock heavily at the same time every year—following an on-and-off policy as far as is practicable. Should I be asked to give my opinion as to whether the three-year ley should be cut the first year, as a general rule I would say no. But where the whole management is of the highest class, an early cut, or early graze and late cut, the first year will not do much harm. Under less efficient management the likely danger may be that the clovers do not establish themselves properly when the field is "let up" for hay.

In my opinion, the most important side of ley farming is the preparation, manuring and management of the land and subsequent pasture—the seeds mixture is important but if the best seeds mixture in the world is sown on an impoverished dirty field no one should be surprised if the resultant pasture is a failure.

Great strides have been made in seeds mixtures (for specimen seeds mixtures see below) since the days of "a bit of everything and a bushel of hope." Since the recognition of wild white clover, improved strains of white clover have appeared—Aberystwyth S.100, and New Zealand certified mother seed white clover are two notable additions to the agriculture of this country. They are more prolific and vigorous than Kentish Wild White and may be just as persistent, although that has yet to be proved.

Great advances have been made by the introduction of improved grasses, particularly the S varieties of Ryegrass, Cocksfoot and Timothy. Every use should be made of these improved strains of grasses and clovers, and of the work which is being carried on by the various grassland improvers of the present day.

Seeds Mixtures

The following examples are taken from the Ministry's suggested Seeds Mixtures:—

1. *Based on Ryegrass, Timothy and Clover*

lb.	
3	Italian Ryegrass.
5	Perennial Ryegrass.
5	Perennial Ryegrass, certified S.23 and/or S.101.
8	Timothy (including leafy strains*).
2	Late Flowering Red Clover.
½	White Clover, certified S.184 or English Wild White.
½	White Clover, certified S.100 or certified New Zealand.
24	*lb. per acre.*

* Proportion of S.48 and S.51, if available.

2. *Based on Ryegrass, Cocksfoot and Clover*

lb.	
3	Italian Ryegrass.
5	Perennial Ryegrass, certified S.23 and/or S.101.
5	Perennial Ryegrass.
4	Cocksfoot, certified S.37.
4	Cocksfoot, certified S 143 or S.26.
2	Late Flowering Red Clover.
½	White Clover, certified S.184 or English Wild White.
½	White Clover, certified S 100 or certified New Zealand.
24	*lb. per acre.*

If desired 4 lb. Timothy can be added.

3. *Simple Grazing Mixture*

lb.	
14	Perennial Ryegrass, or 14 lb. Timothy, or 14 lb. Cocksfoot.
2	White Clover, certified S.100, or certified New Zealand.
16	*lb. per acre.*

At least 50 per cent. of the grass used should consist of certified leafy pasture strains. For drought resistance use Cocksfoot.

Note.—Numbers 1 and 2 are suitable for three years or longer; in fact under good management they could be left down for an unlimited period.

Number 3 is, as stated, a grazing mixture and could be sown where fertility is comparatively low: with continual grazing fertility should rise.

I have given no examples of one year ley (or short ley). These are usually based on red clover and Italian ryegrass, both cheap and prolific. Obviously it would be foolish to sow expensive and durable seeds if the field were to be ploughed up in a year's time.

The Importance of Small Animals to the Profession

(*Contributed*)

There was a time when small-animal practice was an unwanted sideline; unwanted because the busy country practitioner had too many claims upon his time from farmers, and too few facilities for the adequate treatment of dog or cat. Nearly all the drugs on his shelves were best suited to the large animals, while his skill and knowledge were dedicated, and often restricted, to horses and cattle, in which his interest lay.

Those days are passed. Small-animal practice has become an established and progressive entity. It is important that it should remain progressive, and that in country districts and market-towns it should be developed to the greatest possible extent; for the dog-owner is a keen critic and one upon whom the prestige of the profession in part hinges. We want to raise that prestige; the practitioner who has no time or facilities for small animals lets it down. Fortunately, country practices tend to be larger nowadays, with more assistants, and to include one member who is virtually the small-animal specialist in the team. This is indeed a welcome innovation.

Some people may feel tempted to ask: Are not dogs and cats receiving more attention these days than our national resources can stand? Are they not luxuries—an unnecessary drain on our food supplies? Sentimentality is so daubed across the whole subject of small animals that, in order to find the answers to these two questions, we must look beneath the surface to discover the true sentiment, common sense and economics of the matter.

The dog has, through the centuries, been our faithful friend, and one whom domestication has rendered utterly dependent upon us. His welfare is our moral responsibility, and his continued existence—which is a different thing—deserves to be encouraged. Medical science, and all of us, owe a great debt to him as an experimental animal. Moreover, the dog constitutes by far the best medium for teaching veterinary students the essentials of clinical diagnosis, anaesthesia and the technique of surgery.

We cannot pretend that most of our patients are working sheepdogs, police dogs or even watchdogs, or that many of them have attained the high commercial value—as an export—which the racing greyhound undoubtedly has. We must admit that the average well-fed cat probably has more theoretical knowledge than practical experience of catching mice. He does not need to earn his living; mousing is a matter of sport, something to relieve his boredom. Yet his presence discourages rodents, and his opposite number who works for his living in warehouse or on the farm, saves us many millions of pounds a year.

Pet animals which have no commercial use or value may fill, rightly or wrongly, a sociological need. They are a great comfort to many, and during the war they undoubtedly had a steadying effect upon people's nerves and proved a solace. We can grow very fond of them: the dog which fawns upon us and the cat which patronises us.

In the bad times of agricultural depression small-animal practice often served to subsidise farm work. It may still open the door to many a new client with a T.T. herd in the background. And to those who pursue this type of work for its own sake, it offers much that is pleasing and satisfying: the fascination of delicate abdominal surgery, the intricacies of diagnosis, the contacts with other people in their own homes, and the knowledge that one is helping to protect them from diseases communicable to man. It is a branch of our profession which is of the greatest importance, and the degree of our devotion to it often serves as the criterion by which we are judged.

World Butter Fat Record.—Until recently the world's official record for butter fat production in one lactation was held by the Canadian Holstein Friesian cow Alcartra Gerben (420868) that gave in one lactation 27,745 lb. milk in 365 days at 5·08 per cent. and thereby produced the equivalent of 1,409 lb. butter fat. She was milked four times daily. The British Friesian Craigbet Rosani, a member of Miss W. Price's Oldpark (Belfast) Herd, has just completed her fourth lactation and in that gave on three times a day milking 31,339 lb. milk in 365 days at 4·76 per cent. producing the equivalent of 1,492 lb. of butter fat. She was tested and recorded under the Ministry of Agriculture's scheme in Northern Ireland and all details have been thoroughly investigated and the record has been confirmed.

CLINICAL COMMUNICATION

Amputation of the Digit in the Greyhound

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Types of Injury.—The three joints in a greyhound's digit are the commonest sites for injury. These injuries comprise in the main:

1. Arthritis or synovitis with or without a subsequent peri-articular fibrositis and sometimes anchylosis.
2. Dislocation, with rupture of one or both lateral ligaments and sometimes joint capsules.
3. Fracture of the phalanges, sometimes involving articular surfaces and, less commonly, simple epiphyseal fracture.
4. Suppurative arthritis from an infected nail or other skin wound.
5. Rupture of the skin over the terminal joint—the actual joint not necessarily being involved.

Diagnosis.—Injuries to toes are diagnosed mainly by vision and palpation. Radiography may be essential in some cases, but in the main one can carry on without its too frequent use.

Treatment.—The treatment of damaged toes varies with individual opinion, rest being the essential, with poulticing, fomenting, blistering and firing as adjuncts. Pin and line firing are of doubtful value.

Reasons for Amputation.—Amputation of a digit is resorted to when:

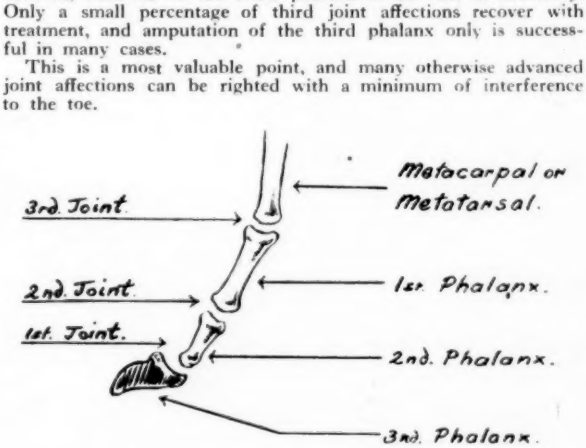
1. It is considered that the injury is beyond all treatment as, for example, when a joint is involved in fracture or where there is complete rupture of joint capsule and lateral ligaments.
2. Where treatment has failed. Here can be included the condition of rupture of the skin over a terminal joint.
3. Where treatment would require, under various circumstances, an uneconomically-long resting period.
4. When an anchylosed joint, though not causing lameness, may mechanically affect the action of a toe, and thus the speed of a dog. This can only be judged by a knowledge of the abilities of that dog.

Sites for amputation.—According to which joint is affected, so the phalanges below this are removed; either amputating at the actual joint in question, or at a joint below this, leaving the affected one intact, thus reducing leverage at a minimum cost to the toe.

It must be borne in mind that the more of a toe that is removed, the greater will be the strain on the adjacent toes. In any case, with removal of the second and third phalanx, the pad must be left intact.

In many instances, where the second and third joints are affected, removal of the third phalanx is all that is necessary. Only a small percentage of third joint affections recover with treatment, and amputation of the third phalanx only is successful in many cases.

This is a most valuable point, and many otherwise advanced joint affections can be righted with a minimum of interference to the toe.



The operation.—This is performed under local anaesthesia, with pre-narcotisation if necessary; 1 c.c. of 2½ per cent. cocaine solution is sufficient, using a dental syringe. Cocaine is preferred as it causes little or no pain when injected.

The site is prepared and a tourniquet applied. A single dorsal incision is made from the joint to the nail, the skin is dissected away from bone and nail, and the joint is severed. The edges of the incision are then brought together with three or four single nylon sutures. It is not necessary to destroy the exposed joint surface of the remaining phalanx.

The foot is tightly bandaged, with small pads of cotton wool between the toes and under the dew claw, and the tourniquet is removed. The dog is box-muzzled.

The dressing is removed the following day and the foot is thenceforward dressed every other day until the sutures are removed. Any blood clots forming in the cavity must be carefully expressed.

In some cases, in spite of all care, sutures are rubbed out. The area may become swollen and raw, and has to heal by second intention. A little time is lost, but the end result is the same.

Normally, with first intention healing, dogs can begin galloping within three to five weeks. Where the terminal phalanx is removed to protect a higher joint, a longer rest is required.

It frequently happens after an amputation that a dog will race satisfactorily, but will finish lame. This gradually diminishes as the stump hardens off.

Conclusion.—In concluding, the importance of obtaining the owner's written permission before embarking upon an amputation must be emphasised.

ABSTRACT

[*Trichomonas foetus* **Infection and Bovine Reproduction.** Bartlett, D. E. (1947.) *Amer. J. vet. Res.* **8**. 343.]

In a preliminary review of the literature Bartlett remarks that opinion on *Trichomonas foetus* infection as a clinical condition has changed markedly since it was first described. The symptoms and vaginitis may be much milder than those originally indicated.

The observations recorded in the article were obtained from a herd which was established in 1936 for the express purpose of studying the infection clinically. The records date from 1936 to 1944. The stock, 29 heifers and cows, were infected periodically by using bulls known to be infected with *T. foetus*, or in a few instances by the intravaginal inoculation of cultures of *T. foetus*.

As a result of the observations over a period of eight years, the following conclusions were reached :

(1) Persistence of infection *post partum* is very rare. Only one unconfirmed report exists of *T. foetus* being found after the sixth week *post partum*.

(2) Infected females may be considered free of *T. foetus*, and safely allowed coitus with uninfected bulls if they have completed (*a*) a normal pregnancy, (*b*) a 90-day post parturition rest period or (*c*) three periods of oestrus.

(3) Non-venereal transmission of trichomoniasis under natural conditions is very rare.

(4) Isolation of infected animals is not essential in controlling the disease.

A chart giving the records of reproduction of the 29 breeding females is incorporated in the article. This gives a comprehensive picture of the course of pregnancy in each animal following service with an infected bull, or intravaginal infection with a culture of *T. foetus*.

[*Abstractor's note.*—The results obtained in this experiment do not bear out research work in this country where trichomonad infection has proved a much more difficult infection to eradicate from a herd.]

G. C. B.

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HIGHER PRODUCTIVITY OF GRASSLAND: MINISTRY'S PROPOSALS

Ministry of Agriculture proposals for home-grown animal feeding-stuffs provide for a 20 per cent. increase in the productivity of grassland this year.

Methods to be applied are the greater use of fertilisers, employment of better strains of grass and clover, improved grassland management, and the reseeding of unsatisfactory pastures. It is also proposed that the supplies thus obtained shall be supplemented by high protein crops such as lucerne, kale, and cabbage, oat, pea and vetch mixtures, and beans.

Mr. Tom Williams, the Minister of Agriculture, is expected to announce in Parliament in the near future the terms of the plan to provide financial assistance for schemes of grass conservation. One project is to provide a system of loans and grants towards the capital cost of installing co-operative grass drying plants serving the needs of groups of small farmers.

NEW INSTRUMENTS AND APPLIANCES

Syringe for Braxy and other Sheep Inoculations

R. W. SAINSBURY, M.R.C.V.S.

Rathdrum, Co. Wicklow

Where large numbers of sheep have to be dealt with, especially in the open, as on a mountain, the use of an ordinary syringe is not always satisfactory. I have found the syringe herein described to be a great saving in time and very suitable for the purpose.

The instrument is a 50 c.c. all metal syringe with a two-way head. Graduations of 5 c.c. are marked on the plunger rod. (Fig. 1).

The arrangement of the conical valves in the head is shown in Fig. 2. It will be seen that both nozzles can be unscrewed to permit of cleaning. On the upward movement of the piston the outlet valve is sucked into its seating and closes, whilst the intake valve is sucked out of its seating and opens, allowing the vaccine to enter the syringe. On the downward stroke the opposite takes place: the intake valve closes and the outlet valve opens to the needle.

The vaccine or other material to be injected is carried in a flat bottle of suitable size (I find 500 c.c. convenient) in the left hand coat pocket of the operator. This bottle is closed with a rubber bung fitted with metal tubes as in Fig. 3. A rubber pressure tube 3 to 4 ft. long connects the output tube of the bottle with the intake nozzle of the syringe. When the last dose leaves the syringe it is only necessary to pull up the plunger to recharge. Should it be preferred, the rubber tube may be dispensed with and the intake nozzle of the syringe fitted direct to the output tube of the bottle each time a refill is required. This is slightly slower.

The advantages of the instrument are the speed of refill and the fact that the vaccine or other material cannot be contaminated or spilled.

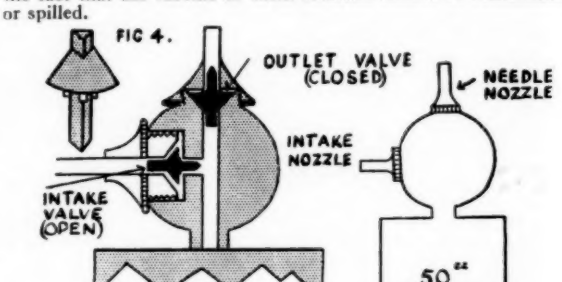

FIG 2

FIG 1.

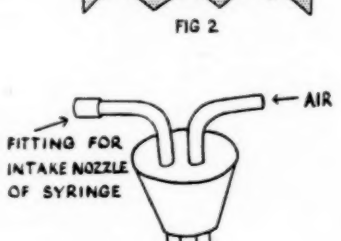

FIG 3.

FIG 4 SHOWS THE VALVE WITH IT'S PRISM SHAPED GUIDE ON THE ANGLES OF WHICH THREE BOSSES ARE LEFT TO PREVENT THE BASE OF THE CONE SEATING WHEN THE VALVE IS IN THE OPEN POSITION.

Weekly Wisdom

As memory is to be our undying companion, let us strive to make her beautiful.—Anon.

A George Fleming Report

We are indebted to Mr. T. H. Billington, of Strood, Kent, for the opportunity of reproducing the following memorandum—truly a model report in its content and phraseology—by Dr. George Fleming, C.B., LL.D. (1833-1901), Inspecting Veterinary Surgeon of the Army, the promoter of the Veterinary Surgeons Act of 1881 and an outstanding exponent and practitioner of our "art and science." Mr. Billington, who is a nephew of the late William South, the noted West End practitioner to whom George Fleming refers in his report, proposes to present the original document, dated March 28th, 1873, to the R.C.V.S. Central Library for Animal Diseases.

Report of Westley Richards' Method of Shoeing Horses

On Tuesday, March 25th, 1873, I inspected a number of hunters—16—belonging to Westley Richards, Esq., Melton Mowbray, and as a result of that inspection make the following report with regard to their shoeing and the condition of their feet.

These horses are shod on a system which appears to be a modification of that patented by M. Charlier of Paris, and known as the "Periplantar method of shoeing."*

The essential difference between the latter and that adopted by Westley Richards consists in a narrower and shorter shoe being employed, the width of metal for a horse about 16 hands high being nearly $\frac{3}{8}$ of an inch, and the length of each branch about two-thirds that of the ordinary shoe, reaching to within an inch or so of the inflexion of the wall at the heel. The thickness of the shoe at the toe is about $\frac{1}{4}$ inch; it gradually becomes thinner towards the end of the branches, and is perforated by four small square nail-holes. A new shoe which was about to be put on a horse over 16 hands high weighed 5 oz.

The portion of wall removed to admit this light rim of metal leaves a recess around the border of the sole—but without infringing in the slightest degree on the latter—into which the shoe exactly fits, its lower or ground surface being on a level with the sole and that part of the wall which is not covered with the iron, and which rests on the ground. The inflexion of the wall at the heel, and the bar, as well as the frog and sole, are left untouched and in all their strength.

The shoes were in every stage of wear, some hoofs being recently shod, while others required shoeing. The farrier who was engaged in shoeing a horse while I was present performed this operation with the greatest ease and expedition, and in a much shorter time than is required in the ordinary method. It requires only one man to make, fit, and put on the shoes, and the consumption of coal, iron, and nails is infinitely less than occurs in other forges where the common heavy shoes are put on.

With the exception of two horses, which had only been shod in this way for a few months, the condition of the hoofs was splendid, and I think I never saw in such a small number of horses so many perfect models. The outer surface of the wall was intact and beautifully sound from the coronet to the lower border—no chipping, shelling or brittleness. The sole in the majority of the hoofs, for a large portion of its extent within the circumference of the wall, came into contact with the ground: thus adding greatly to the bearing surface of the foot. The bars were well developed, defined and strong, and the frogs in a remarkably healthy condition; the latter were indeed much larger than in a healthy foot shod with the ordinary shoe, which only partially, if at all, allows this important portion of the hoof to reach the ground. Though elastic, yet the frogs were strong and resisting and not at all likely to be injured by contact with hard rough ground or broken stones. More especially was there a most striking development of the frog towards its upper part, where its relations with the internal organ named the "plantar cushion," and the elastic lateral cartilages, are so important in connection with physiological movements of the foot. Neither frog nor sole were in the least degree flaky, but were composed of a thick, strong, and yet tenacious and springy horn. Nearly every one of the hoofs was as wide across the quarters as it was long, the general form being circular. They were exactly like hoofs which had never been shod; and if I were desirous of obtaining drawings of what might be termed "perfect hoofs," I could not select better models than these, they being in the soundest condition, and in excellent proportion and outline.

Physiologically, they were as perfect. During walking, trotting and cantering, the feet were placed evenly and firmly on the ground; the action of the horses was good and quite free, and having ridden several of them over the roughly paved streets of Melton Mowbray, I can testify to their being able to travel on the roughest ground with absolute impunity.

Though near the end of the hunting season, the legs—tendons, ligaments and joints—were as cool and clean as if they had undergone no exertion beyond that of gentle exercise on soft ground. The feet also were cool and uniform in temperature. One horse which had been ridden to hounds on the previous day, and only returned to its stable late in the evening, exhibited no traces of severe exertion in its legs or feet on the morning of my inspection. No better evidence could be adduced, I think, of the value of allowing the foot to retain its strength and physiological functions intact. It may be added that I saw only one horse shod in this manner on the hind feet.

Altogether I was much gratified with the inspection, for I cannot remember when I saw so many horses with such fine hoofs; and the simple and ready means by which they were so maintained was not the least edifying and satisfactory feature of this visit. I forbear making any comments as to the advantages to be derived from this method of shoeing, leaving this report of my inspection as a sufficient indication of these; neither do I allude to the length of time during which these horses' hoofs have been so managed, nor the amount of work the animals have undergone. This statement I leave to their enlightened and careful owner, who was anxious to afford me every information, and allow every possible test of the value of this simple and most efficient farriery.

I may state, in conclusion, that there were no loose shoes, and that every iron rim—no matter how long it had been worn, and though only retained by four small nails—was closely and firmly embedded in the narrow recess in the contour of the hoof; so that there could be no risk of the shoe being torn off by the other feet, nor by suction in heavy ground.

GEORGE FLEMING,
Veterinary Surgeon, Royal Engineers.

Brompton Barracks, Chatham
March 28th, 1873.

* Now improved upon by William A. South, F.R.C.V.S., and known as the "Rational."

QUESTIONS IN PARLIAMENT

Pit Horses and Ponies

Mr. PETER FREEMAN asked the Minister of Fuel and Power how many ponies and horses are working in each district down coal-mines; how many inspectors are employed; how many accidents, casual and fatal, have occurred during each of the last five years; in view of the pressure to produce more coal, if he is satisfied that every effort is being taken to safeguard their interests; and what steps are taken for the supervision of their welfare.

Mr. GAITSKELL: As the information involves a very long statistical statement, I am sending my hon. Friend the figures of horses employed and accidents which have occurred in each district during the past five years. There are seven full-time Horse Inspectors of Mines, and other members of the Mines Inspectorate spend part of their time in looking into the care of the horses and their working conditions. I am satisfied that the care and treatment which these animals receive and the conditions under which they work continue to be satisfactory generally, and that all reasonable and practicable efforts are being made to safeguard their interests.

As my hon. Friend knows, the care and treatment and working conditions of pit ponies are strictly regulated by the Coal Mines Act, 1911, and cases of cruelty or ill-treatment can be punished under the Protection of Animals Act, 1911. These provisions are rigidly enforced by the Mines Inspectors, and all complaints received in the Ministry are promptly and thoroughly investigated.

The last three issues of *Mother and Child*, the monthly journal of the National Baby Welfare Council, contain interesting and well-written articles by Mr. Leonard R. Geffen, M.R.C.V.S., of Kensington. In these he deals with the educational value of pets, the initial supervision of children in order that they learn not to maul pet animals, the type of dog or cat to choose. In his last article Mr. Geffen advises and re-assures mothers on the subject of diseases communicable to children from these animals. The appearance of contributions on this subject in this medium is to be commended.

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If an animal dies suddenly a farmer should, in his own interests, report it for a veterinary surgeon to find the cause. This advice was given at Darwen when a farmer was fined £1 and costs for failing to notify an animal that was suspected of anthrax.

NOTES AND NEWS

Diary of Events

Feb. 2nd.—Meeting of the Farmers' Club at the Royal Empire Society, W.C.2 (Dr. W. G. Ogg, M.A.: "Soil and the Farmer"), 2.30 p.m.

Feb. 2nd.—R.V.C. Students' Union Society Annual Ball, at Grosvenor House, Park Lane, W.1.

Feb. 5th.—Meeting of the Lincolnshire and District Division, N.V.M.A., at Lincoln (Saracen's Head Hotel), 2.15 p.m.

Feb. 5th.—Meeting of the Central Division, N.V.M.A., at the Royal Veterinary College, N.W.1, 2 p.m.*

Feb. 10th.—Scientific Meeting of the Zoological Society of London, Regent's Park, N.W., 5 p.m.

Feb. 11th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 2.30 p.m.

Feb. 17th and 18th.—N.A.A.S. (South-Eastern Province) Conference on "Farming Management To-day," in the Guildhall, Winchester, with farm demonstrations on silage. (*See Note.*)

Feb. 19th and 20th.—Special meetings of Council, R.C.V.S., 10, Red Lion Square, W.C.1.

Feb. 21st.—Meeting of the Society of Women Veterinary Surgeons at the Conway Hall, Red Lion Square, W.C.1, 2 p.m.

Feb. 24th.—R.(D.)V.C. Annual Ball, at the Assembly Hall, 54, George Street, Edinburgh.

Feb. 25th.—Annual Meeting of the South-Eastern Division, N.V.M.A., at Tunbridge Wells (Mount Ephraim Hotel), 2.30 p.m.

* *Central Veterinary Society.*—The Hon. Secretary of the Society regrets that, in error, the wrong names of the principal speakers were submitted for the notice of the February meeting. The correct names are as shown in the Notices Column of this week's issue.

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Grants for Veterinary Education

Appointment of Inter-departmental Committee

Announcement is made by the Ministry of Agriculture and Fisheries and the Department of Agriculture for Scotland that, jointly with the University Grants Committee, they have appointed an Inter-Departmental Committee to enquire into the financial needs of veterinary education in Great Britain and to make recommendations to the University Grants Committee, in respect of universities, and to the appropriate Agricultural Minister, in respect of other educational institutions, as to the application of any moneys provided by Parliament towards meeting these needs.

The profession will welcome both the appointment of this committee of enquiry into a matter so vital to its interests and development as the financial needs of veterinary education and the number and personnel of its veterinary representatives.

The Committee is constituted as follows:—

Dr. A. E. Trueman, F.R.S. (*Chairman*), Deputy Chairman of the University Grants Committee.

T. Dalling, Esq., M.A., M.R.C.V.S., F.R.S.E., Director of the Veterinary Laboratories of the Ministry of Agriculture and Fisheries.

H. W. Dawes, Esq., M.R.C.V.S., President of the Royal College of Veterinary Surgeons.

Sir John Fryer, K.B.E., M.A., Secretary of the Agricultural Research Council.

Dr. Thomas Loveday, M.A., Chairman of the Joint Advisory Committee on Agricultural Education.

Professor G. W. Pickering, M.B., F.R.C.P., Professor of Medicine in the University of London, Member of the University Grants Committee.

J. N. Ritchie, Esq., B.SC., M.R.C.V.S., D.V.S.M., Deputy Chief Veterinary Officer, Ministry of Agriculture and Fisheries.

W. L. Weipers, Esq., M.R.C.V.S., D.V.S.M., Member of the Boards of Governors of the Royal (Dick) Veterinary College, Edinburgh, and of the Glasgow Veterinary College.

The Secretary to the Committee is Mr. E. Earnshaw Smith of the University Grants Committee, 38, Belgrave Square, London, S.W.1.

The Ministry of Agriculture and Fisheries and the Department of Agriculture for Scotland will each appoint an Assessor to the Committee.

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Inasmuch as it reflects very much the same position as obtains in British veterinary schools, the following extract from the *Journal of the American Veterinary Medical Association* for January furnishes a fitting footnote to the above announcement, in its relation to the inadequacy of veterinary schools to meet the existing world-wide demand for places:—

"*Six Applicants for Every Seat in Veterinary Schools.*—Between 75 and 90 per cent. of the pre-professional students will never be admitted to their chosen professional schools, according to an Ohio State University survey. There are openings for only about one out of every six qualified applicants in the veterinary colleges. In medicine and dentistry, the ratio of applicants to openings runs as high as 18 to 1 in some places."

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Visit to Denmark (1948) by the Children of Veterinary Surgeons

The Danish Veterinary Association has once again invited children of British veterinary surgeons to go to Denmark for a holiday this summer. They have, in addition, most generously offered to pay the children's expenses from the date of their landing in Denmark to the date of their departure because, owing to the present currency restrictions at this end, no money can be taken out of England to Denmark; return tickets only could be bought for the children. As members will be aware, the ban on travel abroad, with money, is to be lifted for some countries, but it is not certain yet whether Denmark will be one of them. If it is, well and good; if it is not, the children will be able to go just the same through the generosity of our Danish veterinary colleagues. It is hoped that at some future date, Danish children will be invited back to this country as our guests in exchange.

The suggested number for the party is 20 and the Danish Veterinary Association, through an announcement in their journal, are enquiring what ages the hosts and hostesses would like their children-guests to be.

Meantime, owing to the urgent necessity of making at least some preliminary arrangements with Messrs. Cook, would members kindly notify the General secretary, N.V.M.A., 36, Gordon Square, London, W.C.1, **as soon as possible** if they are interested. The period of the holiday will probably be early August to early September.

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PERSONAL

Birth.—Rowson.—On January 21st, 1948, to Audrey Kathleen, wife of L. E. Rowson, M.R.C.V.S., a sister for Peter, John and Kay.

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Marriage.—Greenwell—Croll.—On January 17th, 1948, at Woodbridge Registry Office, George Eric Greenwell, M.R.C.V.S., Ipswich, to Muriel, only daughter of William Frederick Croll, F.F.A., Hamilton Road, Felixstowe.

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Forthcoming Marriage.—Jackson—Hall.—The engagement is announced between Oliphant Fairburn, only son of the late Edward Ellis Jackson and of Lady MacArthur, M.B.E., and stepson of Sir Oliphant MacArthur, C.B.E., of 2, Clare Valley, The Park, Nottingham, and Elizabeth Katherine Marion (Buss), second daughter of Colonel L. R. Hall, M.C. (late Royal Signals), and of Mrs. Hall, of H.Q., 714, C.C.G., Düsseldorf. Both are second year students at the Royal (Dick) Veterinary College, Edinburgh.

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R.C.V.S. OBITUARY

Larkin, Patrick, Aclamon, Campile, Co. Wexford. Graduated Dublin, December 8th, 1943. Died December 26th, 1947.

GENERAL OBITUARY

Mr. H. J. Ede, F.S.R.

Old London College graduates will be sorry to hear of the death of Mr. H. J. Ede, Hon. Radiographer to the School at Camden Town. He died peacefully at his home on Saturday, January 24th. For some years he had been in failing health due to a gradually progressive blindness and "Parkinson's" nerve trouble.

Ede was one of the pioneers in medical radiography and was one of the few—these included Blackwell and Suggars—who worked with the dangerous machines in use at the turn of the century. Fortunately he escaped the more serious consequences, but for many years he was troubled with eye and finger lesions which were directly attributable to X-rays.

He built up a considerable practice in human medicine, but in 1928 he came to the rescue of the R.V.C. in an honorary capacity and thereafter devoted the major part of his time to the veterinary field. Many will remember the somewhat "Heath Robinson" machines of his early days, with the sparks flying in all directions especially in damp weather; also his sharp yet friendly altercations with Mrs. Bell as to how the job should be done. He got results and it may in truth be said that he was a pioneer in the veterinary field. He was a founder member of the Society of Radiographers, was on the council of that body and had served in the Presidential chair.

Previous to taking up X-ray work and training at the London Hospital, Ede was in business as an electrical engineer and contractor. He installed electric lighting in several South London towns and also the telephone systems over a wide area for the old National Telephone Company.

Ede was the first man to own a really powerful X-ray plant on wheels, with which he was prepared to take X-ray pictures of animals in any part of the country. He made many friends in the profession and he was always ready and willing to give his services to poor people and their animals.

It is to men like Ede, men who were prepared to face the dangers of the early machines, that the medical world owes the blessings of modern X-rays.

J. McC.

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NATIONAL HEALTH SERVICE ACT

In its issue of last week *The Lancet* published the answers given by the Minister of Health to questions which it had asked him on the subject of the national health service.

The most important of the Minister's statements is a concession to the doctors on the question of the legal position of partners under the Act.

Mr. Bevan proposes to set up a committee of legal experts, with the co-operation of the profession, to examine the subject, and "if there is evidence that existing partnerships are unfairly prejudiced by the Act he will proceed at once to seek an amendment of it."

Mr. Bevan states that a doctor will have the same rights as any other citizen to go to the courts on the question whether he has been lawfully "dismissed the service"; nor has the Minister any power himself, at any stage, to remove the doctor. He continues:—

"Let it be clear what the doctors' protection is. First, the Minister himself cannot ever remove any doctor's name from the list. Locally, an executive council comes to the conclusion that the continued inclusion of a certain doctor in the lists would prejudice the efficiency of the service. That council is itself half professional and has seven doctors on it. That council, nevertheless, cannot remove the doctor's name from the list: it can only refer the case to a special tribunal of one doctor, one lawyer (appointed by the Lord Chancellor, not the Minister), and one layman. That tribunal can decide in favour of the doctor—in which event nobody at all can overrule it. Or it can decide against him—in which case he has further recourse to the Minister. The Minister can uphold the tribunal's decision or reverse it in the doctor's favour—nothing else."

Against Postponement

Answering the question, "Will the Minister explain why in his opinion further postponement of the introduction of the service, or of the general practitioner part of it, would be contrary to the public interest?" Mr. Bevan says:—

"Since 1942, under different Governments, the conception of a national and comprehensive health service has been actively pursued. The present Government put it into effect, and Parliament endorsed it, in 1946. It is time that the people had it. The old system is partial and, from the national point of view, not effective enough. The country can have—and should have—the complete cover for health which they deserve. Parliament has decided how they can best have it. It is the Minister's duty to carry out that decision, and he is doing so.

"He has preserved all the confidential and personal relationships of doctor and patient which are essential to any health care, the freedom of choice of doctor and freedom to change. He has tried to remove the financial worry of health care by a system of pooling costs and drawing benefit when the need arises. To withdraw the general practitioner service would be to remove from the new health cover the very first line of medical consultation. Why should the people wait longer? For his part, the Minister will give them the service on July 5th."

Importance of Practice Ownership: B.M.A. View

For the meantime, *The British Medical Journal*, seeking to rally the profession in support of the Association's recent recommendation that the Act be rejected, makes the following observations on what it regards as the threat of the institution of a universal whole-time State service, with the prohibition of the buying and selling of practices:

"A man who buys a practice has a stake in the community in which he lives. He has got to make good and command the respect of the people among whom he works. A man in receipt of a salary from the State has no such stake. The struggle to make good is healthy. State subsidy of the mediocre is unhealthy. Doctors are now more sharply aware than ever before of the freedom from State interference which is provided by the ownership of practices. With the abolition of ownership, with the imposition of a universal basic salary, with the refusal of the right of appeal to the courts against the Minister's decision to sack a man in a Service open to the whole community, with the control of the distribution of doctors in the hands of a Ministry Committee, with the power in the hands of the Minister to change by Regulation a part-time into a whole-time State service, doctors will cease to be members of an honourable profession and will become mere technicians employed by the State. Once this has happened Medicine will cease to attract into its ranks the type of man who generation after generation has made Medicine and the medical profession what they are to-day. . . .

"The hypertrophy of bureaucracy is one of the social evils of our time. It may be a sign of our decline from greatness, and we may note that historians held it be an important contribution in the decline of another great empire. We respect our Civil Servants as able and honourable men of an uncorrupt administration, but we believe nevertheless that the extension of their numbers and powers should be restricted if the freest play is to be given to those indispensable qualities of individuality and initiative which have made Medicine what it is to-day. We should take warning from Herbert Spencer, who 60 years ago wrote thus: 'Judge what must under such conditions become the despotism of a graduated and centralised officialism, holding in its hands the resources of the community, and having behind it whatever amount of force it finds requisite to carry out its decrees and maintain what it calls order.' Spencer saw a developed administrative organisation leading to 'a revival of despotism' and described this development in a chapter entitled 'The Coming Slavery' in his book *Man versus the State*."

"Committed, to a Radical Change"

The *Lancet*, however, makes the following point: "From the moment that the Negotiating Committee accepted the major premise that 'the service should be available to the whole community' it was committed to a radical change. It had agreed, wisely or unwisely, that the profession must henceforward perform its task within the framework of a public service, and that the basis of ordinary medical work can no longer be private practice for fees. This granted, all that remains in dispute is whether the Act makes good arrangements for such a service."

Surgeons' Appeal for Unity

At a meeting of the council of the Royal College of Surgeons of England, at which Sir Alfred Webb-Johnson presided, the following resolution was passed:—

The council of the Royal College of Surgeons of England, while believing that every member of the profession must act according to his conscience in deciding whether to accept service under the National Health Service Act, is of opinion that fellows and members of the College should do all in their power to maintain the unity of the profession in its endeavour to attain the highest ideals of service.

Act to Operate from July 5th

The National Health Service Act, in common with the National Insurance Act and the related new social service legislation, will come into operation on July 5th.

This has always been the Government's intention, and an Order-in-Council made on Monday last formally prescribes July 5th as the "appointed day." This means that there will be no postponement of the operation of this Act resulting from the dispute between the Minister of Health and the members of the medical profession.

LEVERHULME RESEARCH FELLOWSHIPS, 1948

Application is invited for Fellowships and Grants in aid of research. The Fellowships and Grants are intended for senior workers who are prevented by routine duties or pressure of other work from carrying out research. They are limited to British-born subjects normally resident in the United Kingdom. In exceptional circumstances the Trustees may waive the condition as to residence.

The Trustees are also prepared to consider applications from groups of workers engaged upon co-operative programmes of research, particularly from those engaged upon long-distance programmes or in institutions in which the normal facilities for research have been curtailed by the war.

The duration of the awards will not normally extend over more than two years or less than three months and the amount will depend on the nature of the research and the circumstances of the applicant.

Forms of application may be obtained from the Secretary, Dr. L. Haden Guest, M.C., M.P., Leverhulme Research Fellowships, 7, Bedford Row, London, W.C.1. Applications must be received on or before March 1st, 1948. Awards will be announced in July and will date from September 1st, 1948.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

SHEEP SCAB:

Merioneth.—Llawrbettws, Corwen, Merioneth (January 20th); Ty Draw, Llandrillo, Merioneth (January 20th).

Westmorland.—Town Head Farm, Asby, Appleby, Westmorland (January 19th).

SWINE FEVER:

Lincs. (*Lindsey*).—Manor Farm, Goulceby, Louth, Lincs. (Jan. 1st).

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A DUTCH BENEFACTION

On behalf of the nation, the Minister of Agriculture recently addressed warm thanks to the Dutch people for their magnificent gift to the Agricultural Disaster Fund, which took the form of the presentation by the Netherlands Government of 500 cattle of splendid type. Commenting on this feature, *The Farmer and Stock-Breeder* observes: "It is only now, having seen the cattle, that we are able to appreciate the magnitude of the gift. The uniformity and type of the heifers bears witness to the care with which they were chosen by the Dutch purchasing mission. Production standards, higher than at first appears because they refer to years when concentrates were almost non-existent in Holland, were imposed and the unanimous verdict of the critics is that this is a remarkably fine lot of heifers. If proof were needed of the quality of the cattle it can be found in the way in which farmers have bid for them. Pedigree breeders and commercial men alike have been buyers and those who bought at the first sale came back again later for more. Animals have gone into some of the best known of all our herds. The immediate result of this gift will be something in the region of £200,000 (including our own Government's contribution) for the Disaster Fund. Secondly there should be a lasting benefit to our dairy herds in the development of which cattle from Holland have already played an important role and not only in one breed."

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The Southern Counties Cat Club held its first show since before the war at Shepherd's Bush and the event brought many distinguished cats to London. . . . In nearly all the classes the cats had high-sounding pedigrees. It was rather pleasant to find that Noxa Teena, a female tortoiseshell, "sire unknown, dam unknown, breeder unknown," walked off with three first prizes.—*The Times.*

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FARMING MANAGEMENT TO-DAY

CONFERENCE AT WINCHESTER

In view of the N.V.M.A. programme for extending the profession's interest in animal husbandry, we draw the attention of readers who may be able to attend, to an important conference, having as its general subject "Farming Management To-day," which will take place under the auspices of the National Agricultural Advisory Service (South-Eastern Province) at Guildhall, Winchester, on February 17th and 18th.

The N.A.A.S. Conference will be opened by Mr. George Brown, M.P., Parliamentary Secretary to the Ministry of Agriculture, after a civic welcome by the Mayor at 10.30 a.m., on Tuesday, February 17th. The morning session will be devoted to the consideration of "The Grass Crop" (Dr. Wm. Davies, Director, Drayton Grassland Station; opener, Mr. J. N. McClean, Deputy-President, N.F.U.). At 2 p.m., "Grassland Development and the Production of Feeding-stuffs" will be discussed (Mr. W. D. Hay, Technical Officer in charge M. of A. Grassland Improvement Branch; opener, Mr. R. M. Paterson, Basingstoke), followed by "An Outline of the New Zealand Dairy Industry, with special reference to Efficiency in Utilisation of Land and Labour" (Professor M. M. Cooper, Wye College; opener, Mr. G. A. Holmes, Agricultural Liaison Officer, N.Z. Government). In the evening Professor J. A. Scott Watson, Chief Scientific and Agricultural Adviser to the Ministry and Director-General of the N.A.A.S., will address the conference when presenting silver challenge cups to the winners of the Silage Competition.

On the Wednesday, at 10 a.m., Professor H. G. Sanders, of the University of Reading, will speak on "The New Rotations" (opener, Mr. T. Parker, Fareham), and following sessions on "Mechanisation of Fodder Crop Production and Harvesting" and "Labour Organisation and Management on the Farm," Dr. John Hammond, of the School of Agriculture, Cambridge, will give an address on "Breeding Better British Livestock." The discussion is to be opened by Mr. J. F. Edgar, Vice-chairman of the Hampshire Cattle Breeders' Society, and Mr. G. N. Gould, a past President of the National Veterinary Medical Association, will be in the chair.

As tabulated below, the methods of silage making and feeding adopted by Hampshire farmers may be seen between the hours of 10 a.m. and 4 p.m. on *Thursday, February 19th*:—

Address of Farm and Points of Interest

Itchen Down, Itchen Abbas:
Pit silage from lucerne, cocksfoot and other leys. Methods of pit excavation and collection of crop. Note roots have been entirely replaced with silage and sugar beet tops.

Hatch Warren Farm, Cliddesden; Moss Farm, Brown Candover; Warren Farm, Micheldever; Houghton Down Farm, Stockbridge:
Pit silage from grass. Methods of pit excavation. Dimensions of pits. Machinery for collection of crop. Methods of feeding and amounts fed. Note on farms (1) and (3): silage has entirely replaced hay and no roots are normally fed on any of these farms.

Pylewell Home Farm, Lymington:
Grass silage and pea and oat silage. Stored in pits on fairly wet land. Silage has entirely replaced roots since silage was adopted seven years ago. All work done by hand.

Thorns Farm, Beaulieu:
Grass and arable silage stored in pits on fairly wet land. Silage entirely replaces roots and some concentrates.

Manor Farm, West Tisted:
Grass silage in conjunction with grass drying. Storage in fixed and portable concrete silos. Machinery for collection of crop. Cutter blower.

Brockbridge Farm, Blackmoor.
Grass silage in conjunction with grass drying. Storage in portable concrete silos.

Flexcombe Farm, Liss:
Grass silage and sugar beet top silage in portable concrete silos.

Ridgeway Farm, Kimpton:
Grass silage made in portable concrete silos.

CORRESPONDENCE

Correspondents should write as briefly as possible and letters should not exceed 350 words.

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

NEW VIRUS DISEASE OF DOGS

SIR,—Following upon my contribution to *The Veterinary Record* of October 25th, 1947, on the subject of poliomyelitis and a new virus disease of dogs, I make no excuse for pursuing the matter further in spite of one or two destructive criticisms. It was perhaps unfortunate that some Press reporter saw the article and made parts of it public; but such a contingency should not prevent us from discussing, in our own professional journals, ideas which may or may not have substance, and which in the former case might be alarming to the general public. Consequent upon that publicity I have received many letters and telephone calls, from widely separated localities, which have caused me much thought and not a little irksome loss of time.

The fact remains that we are faced with a new pathogen, unisolated and unnamed as yet, the ravages of which are definitely on the increase, as can be confirmed by reference to the day book.

As stated in my previous article, the symptoms exhibited are

mainly paraplegia with or without preliminary periods of undefined illness, and in some cases accompanied by marked muscular atrophy. Occasionally symptoms of encephalitis precede, accompany or follow the paralysis, and in a few cases, the animals are in a state of great hyperaesthesia, manifested by lack of sleep, whining, shrieking, and tumbling about. Usually the owners are too distressed to carry on and we have little opportunity of applying a sustained course of treatment.

Actually, little hope of success attaches to any kind of therapy, a state of affairs which will probably be maintained until the research workers have identified the virus and elaborated an anti-virus. Everything points to the pathogen being a virus and one which attacks the central nervous system primarily. So far as I have been able to ascertain from my many investigations, this infection has nothing to do with distemper.

The disease has occurred time after time in dogs old and young, dogs which have never exhibited any symptom of distemper nor imparted distemper to susceptible animals living with them, and in dogs which in early life have been successfully immunised against distemper and remained so for periods up to two or three years—when paralysis set in.

I am being increasingly asked to radiograph dogs to ascertain the cause of paraplegia, but only in a very small minority are there found dislocations or fractures of the vertebral bodies, or calcification of the intervertebral discs.

The suggestion that dogs might be susceptible to the virus of poliomyelitis has apparently interested the Medical Research Council, and it is understood that investigations are now proceeding. So far as I know, such an hypothesis has never been disproved; and it is at least significant that this (not new, but increasingly prominent and incurable) disease of dogs should have coincided with the biggest outbreak of poliomyelitis this country has ever known.

Apropos this suggestion, a qualified masseuse wrote to me as follows: "I was asked to look at a mastiff which had lost the use of its hind legs. I felt its limbs, trying to diagnose its trouble. Strangely enough, four weeks later, I was paralysed and have not recovered after nine months."

Dr. Norman Macfadyean of Letchworth, writing in the *British Medical Journal* of December 6th, 1947, said: "Dr. King-Lewis' letter tempts me to say that I had one case of poliomyelitis in a farmer who lived in an isolated farmhouse. In this house there had been from time to time an epidemic in which the cats became paralysed and died immediately."

That letter, in its turn, prompted Mr. Victor Bonney, the Harley Street surgeon, to write in the *B.M.J.* of December 27th, as follows: "Dr. Macfadyean's letter is interesting because a paragraph in an evening paper a few days ago stated there has been an epidemic of paralysis in dogs in the eastern counties and that 300 cases had been reported. I have two Pekes, and last June one of them, after a day's malaise, became partially paralysed in her hind legs and tail. Recovery ensued in 14 days. Then, a month afterwards, the other, after 24 hours of lassitude, became totally paralysed in both hind legs and tail. The lesion must have been in the dorsal cord, for both hind legs and the tail were spastic. The bladder function was unimpaired but the bowel action was difficult from the loss of the muscles accessory to defaecation. The dog was very ill for a week and then got better, but the spastic paralysis remained unchanged for over two months and then recovery ensued. Injury can be absolutely ruled out; and both dogs are beyond the age for distemper, and moreover there are no symptoms of it. It seems pretty certain that the condition was due to a virus, and the occurrence of such cases at the same time that an epidemic of anterior poliomyelitis is affecting the country is surely suggestive."

Several veterinary surgeons have written describing "mysterious" nervous diseases, and one American army veterinary surgeon states, in the course of a letter: ". . . I have been able to maintain a small animal hospital on one of my bases and have seen a lot of dogs with this condition (about 35). They have been very interesting because all but one has died or been destroyed in the very late stages of the disease. I have post-mortemed about eight of these animals and am having sections taken. More than half the dogs developed symptoms of twitching, partial paralysis and general debility. The percentage was so high that I suspected a new disease or a secondary virus to distemper. I have not been using the virus in my immunisations, so I don't think the fault lies there."

Miss Naomi Jacob, the celebrated authoress, wrote that an Italian veterinary surgeon—Dr. Gnes—has recently discovered a new serum injection which has proved astonishingly successful in these cases. She said: "I talked at length with a number of doctors in the North of England and they were all intensely interested. I am certain that the matter is too big for it to be allowed to drop."

I am promised a supply of this serum from Italy and shall of course communicate later with *The Veterinary Record* concerning it.

Dr. Winsser, a research worker, of Leiden, Holland, recently sent me some literature on what he called "the genuine encephalitis of the dog (caused by a virus different from distemper virus)." The translated summary of a paper by Verlinde & Ojemann stated that recovery from encephalitis had been effected in from 45 to 79 per cent. of cases by the intramuscular injection on two consecutive days of 1 c.c. pernaemon forte. One c.c. of the latter is equivalent to 5,000 grammes fresh liver. Apparently the active principle in the cure is not alone the vitamin B but some other substance not as yet isolated, and which also is the primary factor in recovery from pernicious anaemia of the human.

I am informed also that the oral administration of crude cane sugar molasses is not infrequently a cure in cases of paraplegia. One tablespoonful is given the first day, and as much as three tablespoonfuls are reached on subsequent days—provided the diarrhoea occasioned can be kept in check.

In 1939 Verlinde described the genuine dog encephalitis in Holland: "The virus was only found in the central nervous system and the nasopharynx. It is not related to the distemper virus. Before the nervous symptoms are observed, often a catarrh of the bowels is seen. The nervous symptoms do not differ from those seen in distemper, but the typical symptoms of distemper are absent. The histopathology is quite different to that of distemper. The genuine encephalitis is a polio-encephalitis with changes in the brain and/or in the spinal cord. The cerebellum is mostly unchanged. There are perivascular infiltrations of lymphocytic cells, but in the acute phase, leucocytes and plasma cells also have been seen.

The Carré encephalitis is a leuco-encephalitis and is found also in the cerebellum. Verlinde could prove in a cross-immunity test, that the virus obtained from the nasopharynx or the brain, was different from the original classical Carré virus."

In December last I sent the carcase of a Scottish terrier (destroyed because of paralysis) to a well-known pathological laboratory, and part of the report read as follows: ". . . Ferrets were injected with brain emulsion, with spleen emulsion and with lung emulsion. None of these ferrets developed distemper within the normal incubation period but now, after rather more than 20 days, symptoms have appeared in almost all these ferrets and some have actually died. This is not the first time we have isolated a strain of virus which did not produce distemper in the ferret in the normal period."

At the last general meeting of the South Wales Division it was suggested that an investigation into the causes (and presumably the cure) of encephalitis in dogs should be undertaken as early as possible, "as the condition had apparently been encountered more commonly of late and was causing some anxiety amongst veterinary practitioners in that area."

I, personally, am hoping that this disease will be one of the very first to occupy the attention of the "Canine" section of the Veterinary Educational Trust, as I can certainly think of no other which is causing such confusion, and loss among the canine population.

Yours faithfully,

658, Finchley Road, N.W.11. HAMILTON KIRK.

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PENICILLIN

Sir,—Your editorial of January 10th, was devoted to the subject of diminution in the efficiency of penicillin and the authorities quoted were not veterinary workers. This would not be remarkable if almost any other therapeutic substance had been under consideration.

The general method of the application of penicillin in veterinary practice (infusion of the bovine udder) is quite different from its use in human medicine. I have also been informed that *in vitro* results can be misleading.

I had not been aware of the phenomenon to which you referred but I have been told by a farmer that it has occurred!

This may be a timely warning that you have given us but we have not yet had veterinary evidence that the efficacy of penicillin *is* declining. The publicity given to such a serious matter might well influence the word spoken to the client but should the client speak of it first then the position would be less pleasing.

"Penicillin morale" is high just now. Propaganda can be the enemy of morale.

Yours faithfully,

Little Orchard,
Whatton-in-the-Vale,
Near Nottingham.
January 18th, 1948.

LINDSAY AUCHTERLONIE.

EXCEPTIONAL AGE AND FERTILITY IN A SHEEP

Sir,—We were asked to conduct a *post-mortem* examination of a ewe which the owner had found dead that morning. The history attached to this case seems worthy of record.

Post-mortem examination showed that both ears (apart from cartilaginous stumps) were missing as also was one complete eyeball. There was not a single tooth in the head. Internally, although to outward appearances the body was in fair condition, there was not a vestige of body fat—the kidneys standing out, denuded of their usual covering of adipose tissue. The pericardial sac was partially distended with a water clear fluid. No other abnormalities were noted. A worm count showed the presence of 24,800 to 25,000 nematodes in the abomasum and intestine respectively. A bacteriological examination was negative.

According to the history, this ewe was born in the spring of 1926 and that summer accompanied her mother and the rest of the flock to the mountain grazing, which rises to a height of 2,700 feet. At the autumn round-up she was missed and regarded as lost. However, when the flock went up again the following spring, the lamb, now a yearling, was recognised on the mountain by the farm paint mark. When caught she was found to have lost both ears and one eye was said to be "gangrenous." This the owner attributed to the extreme exposure to frost and wind. Since that time she appeared to have had an exceptionally healthy life, bearing a lamb each spring up to and including 1947—a total of 19 lambs. This year's lamb had been graded at the autumn sales at an estimated weight of 29 lb. The farmer reports that it is his practice to dose his flock thrice annually with phenothiazine but that in recent years this ewe had shown a marked intolerance to the drug and had consequently received no worm treatment. When on the mountain she was generally found grazing alone on or near the summit.

Is this a record age for a sheep? Does her survival during her first winter have any bearing on the later strong constitution? Is this an example of the persistence of characteristics acquired during early life and, finally, can we think of a finer example of ovine fertility?

Yours faithfully,

W. T. Rowlands,
Veterinary Investigation Officer.

Veterinary Investigation Centre,
Memorial Buildings,
Bangor.

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THE VETERINARY EDUCATIONAL TRUST

Sir,—I should like to express our cordial appreciation of the editorial comment in your issue of January 17th on the appeal recently circulated to all N.V.M.A. members in Great Britain to give their active support to the activities of the Veterinary Educational Trust.

It is too early yet to compute the response to our appeal, but already we have received some extremely encouraging offers of help, and it is evident that there is wide agreement with the view which I heard expressed the other day by a distinguished practitioner, that "The Trust is the shop window of the veterinary surgeon." Another practitioner wrote to me to voice his admiration of the Trust's literature which, he declared, represents the first effort he has known in his lifetime to show the world what the profession is doing.

Such sentiments as these emphasise the vital importance of the support of N.V.M.A. members in relation to the membership campaign which the Trust has launched in the counties in order to secure the large increase of income which must be forthcoming if our programme is to be carried out in full. The organisation campaign will cover every administrative county in England and Wales and will be extended at the earliest possible moment to Scotland and Northern Ireland. We hope to have all livestock and kindred interests represented at the inaugural meetings for the constitution of our County Committees, and it is obviously imperative that veterinary medical men in the counties should come forward to serve on these Committees and their Sub-committees.

As it falls within my province to get these Committees set up, I am, naturally, very much concerned to know the measure of support which will be available from N.V.M.A. members in each county, and for that reason I study the daily analysis of replies to our circular appeal with especial interest.

You, sir, said that you looked to your readers "to ensure a 100 per cent. response to the Trust's appeal for support." At the moment there are many counties where that percentage is very far from being attained. I want to be able to claim in every county I visit that the profession is solidly behind us, and for that reason *I beg of all N.V.M.A. members who have not yet found time to reply to our letter to do so as a matter of urgency.* The Trust looks to them to boost their own "shop window."

Yours very truly,

Cleveland Fyfe,
Organising Secretary.

The Veterinary Educational Trust,
232-235, Abbey House,
Victoria Street, London, S.W.1.
January 26th, 1948.

MUTUAL EXCHANGE VISITS OF CHILDREN OF ENGLISH AND FRENCH VETERINARY SURGEONS

Sir,—May we again remind members that we are continuing with our arrangements for mutual exchange visits of the children of English and French veterinary surgeons.

We are assured by our French colleagues that a hearty welcome awaits English children and we can place as many as desire to go. We feel that the valuable contacts which have already been made will more than repay the effort involved.

We ask any member who would invite a French child to his home this summer, or who would care for his children to be placed in France, to communicate with either of the undersigned.

Yours faithfully,

T. J. Tyrrell.
John Pasfield.

Courtlands Farm,
Coolham, Horsham.
January 22nd, 1948.

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BIOGRAPHY OF SIR JOSEPH BARCROFT

Sir,—Lady Barcroft and Professor Henry Barcroft have honoured me by inviting me to write the biography of the late Sir Joseph Barcroft, F.R.S. I have accepted the invitation in the certain belief that I can count on the co-operation of Sir Joseph's numerous colleagues and friends, and I write this letter to enlist their assistance, which will receive full acknowledgment in any consequent publication.

The form which such assistance will take will vary from individual to individual. One may make suggestions as to treatment of the subject, another may provide an anecdote, another may give an instance of Sir Joseph's generous help in research, and so forth—it is not for me, at this stage, to ask for specific information about this or that aspect of Sir Joseph's life and work. I must, however, give a closing date for the receipt of such material, and the date I have in mind is the last day of April, 1948.

I should be grateful if the material could be sent to me at the Department of Physiology, The Medical College of St. Bartholomew's Hospital, Charterhouse Square, London, E.C.1, with clear indications as to whether it is to be returned to the sender or can be retained.

Should I be prevented from writing the biography, I assume that I may hand over any material so received to an alternative author chosen by Lady Barcroft and her son.

Yours faithfully,

K. J. Franklin.

DISEASES OF ANIMALS ACTS, 1894 TO 1937, AND AGRICULTURE ACT, 1937 (PART IV).

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Fowl Pest	Parasitic Mange•	Sheep Scab	Swine Fever
Dec. 16th to 31st, 1947	6	1	48	—	17	3
Corresponding period in—						
1946	4	13	—	—	2	2
1945	4	2	—	—	3	22
1944	8	6	—	—	12	53
Jan. 1st to Dec. 31st, '47	121	104	2,222	1	103	37
Corresponding period in—						
1946	95	54	—	7	94	347
1945	119	129	—	6	121	928
1944	189	181	—	8	245	1,449

Note.—The figures for the current year are approximate only.
• Excluding outbreaks in Army Horses.

Tuberculosis (Attested Herds) Schemes

The number of Attested Herds, *i.e.*, herds officially as free from Tuberculosis as at December 31st, 1947, was as follows:—

England	Wales	Scotland	Total (Great Britain)
9,443	11,099	9,892	30,436